

THE UNIVERSITY OF TEXAS AT AUSTIN

## RECOMMENDATION FOR CHANGE IN ACADEMIC RANK/STATUS

Name: Yeh, Hsin-Chih EID: hy3982 Present Rank: Assistant Professor

Years of Academic Service (Include AY 2017-18 in each count):

At UT Austin since: 9/1/2012 (month/day/year) Total Years at UT Austin: 6In Present Rank since: 9/1/2012 (month/day/year) Total Years in Present Rank: 6

Tenure-track only:

Number of Years in Probationary Status: 6Additional information: N/APrimary Department: Biomedical EngineeringCollege/School: Engineering, Cockrell School ofJoint Department: N/ACollege/School: N/AOther Department(s): N/ARecommendation actions<sup>1</sup>:By Budget Council/Executive Committee: PromoteVote<sup>2</sup> for promotion 12; Against 0; Abstain 0; Absent 0; Ineligible to vote 1By Department Chair: PromoteBy College/School Advisory Committee: PromoteVote<sup>2</sup> for promotion 7; Against 0; Abstain 0; Absent 0; Ineligible to vote 0By Dean: PromoteAdministrative Action: Promote to Associate ProfessorDate Action Effective: September 1, 2018

(To be submitted to the Board of Regents as part of the annual budget.)

By: Maurice McInnis

For the President

Date: February 15, 2018<sup>1</sup>See "Chart of Recommended Actions" for eligible recommended actions applicable to specific conditions and administrative levels.<sup>2</sup>Record all votes for and against promotion, abstentions by eligible voting members, and the number of absent eligible voting members. The number of committee members ineligible to vote should also be recorded. Enter zero where it would otherwise be blank.

EVPP/4.15





The University of Texas at Austin

Cockrell School of Engineering

**Dean's Assessment****Hsin-Chih (Tim) Yeh**

Department of Biomedical Engineering  
Cockrell School of Engineering

Dr. Hsin-Chih Yeh received his BS in mechanical engineering in 1994 from the National Taiwan University and his MS in mechanical and aerospace engineering from UCLA in 1998. Between 1998 and 2003, he worked as a senior research and development engineer for Optical MicroMachines, Inc. in San Diego. Dr. Yeh received his PhD in mechanical engineering from Johns Hopkins University in 2008. He served as a postdoctoral fellow at Johns Hopkins and Los Alamos National Laboratory from between June 2008 and July 2012. He joined the Department of Biomedical Engineering at UT as an assistant professor in September 2012. If promoted to associate professor in September 2018, he will have accumulated six years of probationary service.

Dr. Yeh creates new nanomaterials that can be used as molecular probes, and develops new imaging tools for studying individual cells and molecular processes. His work provides new techniques for studying the dynamics, kinetics, and signaling of various processes in cells and tissues. Long-term, his work could lead to new techniques for disease detection and diagnosis. His work is central to biomedical imaging and instrumentation, which is one of the four core research areas within the Department of Biomedical Engineering.

Eight external letters were submitted as part of the promotion dossier, with four letter writers recommended by Dr. Yeh and four selected by the budget council. All the letter writers are faculty at US institutions: Columbia<sup>1</sup>, Duke, Georgia Tech, Johns Hopkins, Penn, Rice, UC Irvine, and UCLA. One letter writer is a member of the National Academy of Engineering (NAE), and one is a member of the National Academy of Sciences (NAS). Two letter writers recommended by the budget council did not respond, and one recommended by the budget council declined citing lack of time and personal family issues.

Teaching

While in rank, Dr. Yeh has taught two undergraduate courses and two graduate courses:

- BME 113L/313L, *Introduction to Numerical Methods*  
Required undergraduate course  
Taught three times (average enrollment of 105 students)  
Instructor ratings: 3.8 to 4.4 | Course ratings: 3.2 to 3.9
- BME 354, *Molecular Sensors and Nanodevices for Biomedical Applications*  
Undergraduate elective  
Taught three times (average enrollment of 20 students)  
Instructor ratings: 4.6 to 4.8 | Course ratings: 3.9 to 4.4

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<sup>1</sup> Technically, Dr. Leong is not arms' length because he is a co-author on a paper with Dr. Yeh. However, this paper involved researchers at multiple universities and Dr. Leong and Dr. Yeh did not collaborate directly.

- BME 381J, *Fluorescence Microscopy and Spectroscopy*  
Graduate elective  
Taught two times (average enrollment of 16 students)  
Instructor ratings: 4.2 to 4.8 | Course ratings: 4.0 to 4.5
- BME 385J, *Biomedical Micro- and Nanotechnology*  
Graduate elective  
Taught one time (enrollment of 7 students)  
Instructor rating: 4.8 | Course rating: 4.7

With the exception of the first time that Dr. Yeh taught a class with 100 students, his instructor ratings in individual courses have not fallen below 4.1. Senior faculty conducted peer evaluations in Prof. Yeh's courses four times. The comments about his lecture style and interactions with students are uniformly positive. Dr. Yeh attended the 2015 National Effective Teaching Institute, sponsored by the American Society for Engineering Education, and the Student Engineering Council recognized him with the Outstanding Faculty Award for the Department of Biomedical Engineering in 2016.

#### Research

Dr. Yeh's research is focused in two main areas: the development of novel nano-probes and sensors, and the development of new microscopy methods for tracking single molecules and particles. This microscopy method is called TSUNAMI (Tracking Single particles Using Nonlinear And Multiplexed Illumination), and allows three-dimensional tracking of the dynamics of molecules within cells with nanometer spatial precision. Highlights of his research accomplishments at UT include:

- 14 archival journal publications in rank (33 total). He has published 14 journal papers with his students at UT.
- Many of his papers in rank are published in high impact journals, such as *ACS Nano* (IF=13.9), *Journal of the American Chemical Society* (13.9), *Nature Communications* (12.1), and *Biophysical Journal* (3.6).
- 1 US patent awarded, 1 US patent application filed, and 1 international patent application filed in rank.
- An h-index of 21 (Google Scholar) and 2,670 citations

While in rank, Dr. Yeh has secured five research grants totaling \$1.4 million in external funding (his share is \$0.98 million). He is the PI on all five awards. He received an R21 award<sup>2</sup> from the National Institutes of Health (NIH) with a co-PI in BME and a co-PI from MD Anderson, and an award from the National Science Foundation (NSF) with a co-PI at Furman University. He has also received individual investigator awards from the Texas 4000 Foundation and the Welch Foundation.

The letters from the eight external reviewers were uniformly positive and identified his specific contributions to the field of single molecule tracking. Dr. Andrew Tsourkas (Department of Bioengineering, Penn) noted that Dr. Yeh's external funding was "not earth shattering," and then commented that it was "on par with what I have seen from many others going up for tenure."

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<sup>2</sup>NIH Exploratory/Developmental Research Grant Award (R21)

Advising and Student Mentoring

Dr. Yeh has graduated two PhD students in rank (1 co-advised). In addition, Prof. Yeh acted as a research mentor to one student who earned his PhD from UT in 2014 after his primary advisor (John Zhang) relocated to Dartmouth University. Dr. Yeh also mentored one postdoctoral fellow. Dr. Yeh is currently supervising four PhD students.

While in rank Dr. Yeh has advised 20 undergraduate students, six of whom have contributed to journal publications from his lab.

University Service

Dr. Yeh has served on six departmental committees, and is currently chair of the Graduate Studies Committee for BME. At the Cockrell School level, he is an active member of the Ad Hoc Math Curriculum Committee, which is working to address issues in the math curriculum for first- and second-year engineering students. Dr. Yeh has been also served as a mentor for the Taiwanese Student Association and the Travis County Christian Assembly Chinese Campus Fellowship.

Professional Service

Dr. Yeh's professional service has primarily been related to paper and proposal review. He has also served as session chair and/or on the technical program committee for several national and international conferences.

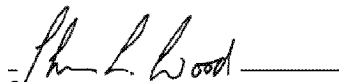
Other Evidence of Merit or Recognition

Dr. Yeh was one of two former postdoctoral associates to receive a Postdoctoral Publication Prize by Los Alamos National Laboratory in 2013. His teaching was also recognized with an Outstanding Teaching Award by the Student Engineering Council in 2016.

Overall Assessment

Dr. Yeh has developed a reputation as an outstanding researcher and has established a strong, sustainable research program. His teaching of both undergraduate and graduate courses is also outstanding. He has provided an appropriate level of service to the BME department and UT Austin, but has not assumed leadership roles outside the university.

Overall, I believe that Dr. Yeh's performance exceeds expectations in the areas of teaching and research and meets expectations in the area of service. Accordingly, I am pleased to provide my strong recommendation that Dr. Yeh be promoted to associate professor with tenure.



Sharon L. Wood, Dean

6 November 2017

**Candidate's Summary of Activities**

(in rank for assistant professor; since last promotion for associate professors)

**Hsin-Chih "Tim" Yeh**

<b>Metric</b>	<b>Value</b>
Peer-reviewed journal publications (in rank and total)	14 / 33
Peer-reviewed conference proceedings (in rank and total)	4 / 14
Number of journal papers in rank with supervised student(s) from UT as co-author	14
Total citations of all publications (career) from ISI Web of Knowledge	1886
h-index (career) from ISI Web of Knowledge	16
Total citations of all publications (career) from Google Scholar or Publish or Perish	2603
h-index (career) from Google Scholar or Publish or Perish	20
Total external research funding raised in rank	\$1.405M
Total external research funding raised in rank (candidate's share)	\$0.975M
Total number of external grants/contracts awarded in rank	5
Number of external grants/contracts awarded in rank as PI	5
PhD students completed†	2
MS students completed†	0
PhD students in pipeline (as of 09/2017) †	2
MS students in pipeline (as of 09/2017) †	0
Number of courses taught	9
Total number of students taught in organized courses	410
Average instructor evaluation for UG courses	4.38
Average instructor evaluation for Grad courses	4.6
Average course evaluation for UG courses	3.85
Average course evaluation for Grad courses	4.4
Number of teaching awards	1
Student organizations advised	2 (TCACF and TSA)
Undergraduate researchers supervised	20
Service on journal editorial boards	0
Number of symposia organized	5

† Count a student as 1.0 if sole supervisor and 0.5 if co-supervised.

## Candidate's Summary on Research

(in rank for assistant professors; since last promotion review for associate professors)

**Table 1. Research Summary**

<b>Metric</b>	<b>Value</b>
Peer-reviewed journal publications (in rank and total)	14 / 33
Peer-reviewed conference proceedings (in rank and total)	4 / 14
Number of journal papers in rank with supervised student(s) from UT as co-author	14
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Total external research funding raised in rank	\$1.405M
Total external research funding raised in rank (candidate's share)	\$0.975M
Total number of external grants/contracts awarded in rank	5
Number of external grants/contracts awarded in rank as PI	5

**Table 2. External Grants and Contracts Awarded**

<b>Role of Candidate and Co-Investigators</b>	<b>Title</b>	<b>Agency</b>	<b>Project Total</b>	<b>Candidate's Share</b>	<b>Grant Period</b>
PI Co-PI: Andrew Dunn, BME Co-I: Mien-Chie Hung, UT MD Anderson Cancer Center	An integrated imaging tool for probing EGFR subcellular trafficking in real time	NIH-NCI	\$430k	\$250k	6/1/15-5/31/18
PI Co-PI: Jeffrey Petty, Chemistry, Furman University	Engineering silver clusters for molecular measurement	NSF-CHE	\$550k	\$300k	7/1/16-6/30/19
PI	NanoCluster Beacons for highly specific DNA methylation detection	Welch Foundation	\$375k	\$375k	6/1/13-5/31/19
PI	An integrated tool for probing receptor trafficking and signaling in cancer cells	Texas 4000 Foundation	\$25k	\$25k	9/1/14-8/31/15
PI	Molecular trajectory as a biomarker for early detection of castration resistance	Texas 4000 Foundation	\$25k	\$25k	2/17/17-2/16/18
<b>TOTAL</b>			<b>\$1.405M</b>	<b>\$0.975M</b>	

Notes:

- (1) For all projects, list the role of the candidate.
- (2) For projects with co-investigators, also list name, role (PI or Co-PI), and department (university if not UT) for each co-investigator.